FEB 1 1 1977

Distribution
Docket
ORB #3
Local PDR
NRC PDR
VStello
KRGoller
TJCarter
Attorney, OELD
GLear
CParrish
SNowicki
DEisenhut
TBAbernathy
JRBuchanan
ACRS (16)

Docket No. 50-220

Niagara Mohawk Power Corporation
ATTN: Mr. Gerald K. Rhode
Vice President - Engineering
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

We have completed a preliminary review of your December 7, 1976 request for Technical Specification changes for Nine Mile Point Unit No. 1 Spent Fuel Pool Modification. We have concluded that we need additional information to complete our review.

Please provide responses to the items of information identified in the enclosure. If you have any questions, please contact us.

Sincerely,

Original signed by

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosure:
Request for Additional
Information

cc: Arvin E. Upton, Esquire
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N. W.
Washington, D. C. 20036

Anthony Z. Roisman, Esquire
Roisman, Kessler and Cashdan
1025 15th Street, N. W.
5th Floor
Washington, D. C. 20005

Mr. Eugene G. Saloga, Applicant Coordinator
Nine Mile Point Energy Information Center
P. O. Box 81
Lycoming, New York 13093

220
Ap 3
GD

OFFICE				ORB #3	ORB #3	
SURNAME				SNowicki:mjf	GLear	
DATE				2/11/77	2/11/77	

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION

NINE MILE POINT UNIT 1

SPENT FUEL POOL MODIFICATIONS

1. Provide detailed sketches of the supports and bearing pads for the lateral restraints of the fuel rack assemblies. In addition, since Figures 5.a and 6 do not show sufficient details of the rack base structure, provide clear sketches of a typical base and its interconnecting structure to other bases.

2. Provide sketches of the mathematical models of the fuel pool, the fuel storage rack, and the fuel assembly system which were utilized in the analysis. Illustrate on the sketches the mechanism of shear and load transfer to the fuel pool walls and floor slab. Discuss the effects of sloshing water. Also, provide the resulting significant modal frequencies of the fuel racks in air and water, and the corresponding mode shapes and participation factors.

3. Provide the response spectra utilized for the SSE and the OBE conditions. Also state the damping values assumed for the fuel racks.

4. The maximum vertical seismic acceleration should normally be approximately 2/3 of the maximum horizontal acceleration. Justify the ratio utilized on page 16 of Attachment "B".

5. Your reference to Table 1 regarding the loads, load combinations and acceptance criteria utilized in the design of the racks is not sufficient for an adequate review of the design. Therefore, provide a summary for these items.

6. State clearly the codes which are utilized for the design, fabrication, and installation of the rack structure. Specify the codes from which the maximum stress limits (at appropriate temperatures) for the materials and welds were obtained.

7. Compare the most severe temperature distribution considered for the structural design of the fuel pool structure for both the original rack design and the new rack design.

8. Provide a summary of the highest stresses, the corresponding safety margins, the locations where these occur, and the maximum displacements at the top of the racks for the loading conditions considered in the analysis of the rack structure.

9. Provide the details of your analysis considering the impact of the fuel assemblies against each other and against the rack walls. Show how you incorporated the local effect into the total effect on the rack design.

10. Provide a detailed summary of the stress margins due to the increased loading of the fuel pool walls and floor for the critical load combinations. Include a discussion of the possibility of shear failures in the areas of contact of the rack supports with the floor and walls. Compare numerically these results to those for the previous rack structure.

11. On page 27 of Attachment "B", provide a numerical comparison of the impact strengths against dropped assemblies of the new and the old rack structures.

12. In section 7.3, it is stated that there is no threat to the integrity of the pool liner if a rack is accidentally dropped into the pool during construction. State the assumptions regarding the kinetic energy of the dropped rack and the ductility factor of the target in absorbing the energy of impact and provide the results of your analysis.

13. In Attachment "B", the references made on pages 3 and 17 to Table 1 for the codes applicable to the design, fabrication and erection of the rack structures are not clear. To clarify your references, the codes utilized for each of these items must be identified separately.